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(54) Title: **PYROGENIC SILICON DIOXIDE AND A DISPERSION THEREOF**

(57) Abstract: Pyrogenic silicon dioxide powder with a BET surface area of 30 to 90 m<sup>2</sup>/g, a DBP index of 80 or less, a mean aggregate area of less than 25000 nm<sup>2</sup> and a mean aggregate circumference of less than 1000 nm, wherein at least 70% of the aggregates have a circumference of less than 1300 nm. It is prepared by mixing at least one silicon compound in vapour form, a free-oxygen-containing gas and a combustible gas in a burner of known construction, igniting this gas mixture at the mouth of the burner and burning it in the flame tube of the burner, separating the solid obtained from the gas mixture and optionally purifying, wherein the oxygen content of the free-oxygen-containing gas is adjusted so that the lambda value is greater than or equal to 1, the gamma value is between 1.2 and 1.8, the throughput is between 0.1 and 0.3 kg SiO<sub>2</sub>/m<sup>3</sup> of core gas mixture and the mean normalised rate of flow of gas in the flame tube at the level of the mouth of the burner is at least 5 m/s. The powder can be used as a filler. A dispersion containing the powder according to the invention. The powder can be used as a filler in rubber, silicone rubber and plastics. The dispersion can be used to prepare glass items.